

POTLINING RECOVERY - SUMMARY 1982 WORK

A chemical process was designed to recover fluoride values from spent potlining and fluoride containing insulating materials associated with the potlining. All waste effluents are environmentally safe. The process consists of reducing the potlining materials to a fine particle size and incinerating. The ash residue is leached with dilute caustic and the leachate is treated with a calcium compound to precipitate calcium fluoride. The calcium fluoride is dried and treated with sulfuric acid to liberate hydrogen fluoride gas, which is recycled to the reduction pot after being adsorbed by alumina. The solids residue is treated with lime and disposed of as landfill.

A joint Alcan/Anaconda "Pre-Phase I" study reviewed the economic and technical aspects of forty chemical processes for resource recovery from spent potlining. The study concluded that the Anaconda 116 and the Alcan Mini-L processes warrant further study on a larger scale. The study recommended that a joint Alcan/Anaconda "Phase I" study be undertaken at a bench scale level so that design parameters for a possible future pilot plant could be developed.